

February 24, 2017



U.S. Department
of Transportation

East Building, PHH – 30
1200 New Jersey Avenue, Southeast
Washington, D.C. 20590

**Pipeline and Hazardous
Materials Safety Administration**

DOT-SP 14591
(THIRD REVISION)

EXPIRATION DATE:

(FOR RENEWAL, SEE 49 CFR § 107.109)

1. GRANTEE: Essex Industries, Inc.
St. Louis, MO
2. PURPOSE AND LIMITATIONS:
 - a. This special permit authorizes the manufacture, mark, sale and use of non-DOT specification insulated cryogenic cylinder conforming with all regulations applicable to a DOT Specification 4L cylinder, except as specified herein, for the transportation in commerce of oxygen, refrigerated liquid. This special permit provides no relief from the Hazardous Materials Regulations (HMR) other than as specifically stated herein. The most recent revision supersedes all previous revisions.
 - b. The safety analyses performed in development of this special permit only considered the hazards and risks associated with transportation in commerce. The safety analyses did not consider the hazards and risks associated with consumer use, use as a component of a transport vehicle or other device, or other uses not associated with transportation in commerce.
3. REGULATORY SYSTEM AFFECTED: 49 CFR Parts 106, 107 and 171-180.
4. REGULATIONS FROM WHICH EXEMPTED: 49 CFR §§ 173.316, and 178.57 in that a non-DOT specification cylinder is not authorized, except as specified herein.
5. BASIS: This special permit is based on the application from Essex Industries, Inc., dated November 14, 2016, submitted accordance with § 107.109.

February 24, 2017

6. HAZARDOUS MATERIALS (49 CFR § 172.101):

| Hazardous Material Description | | | |
|--|------------------------|-----------------------|---------------|
| Proper Shipping Name | Hazard Class/ Division | Identification Number | Packing Group |
| Oxygen, refrigerated liquid (cryogenic liquid) | 2.2 | UN1073 | N/A |

7. SAFETY CONTROL MEASURES:

a. PACKAGING - Prescribed packaging is a vacuum insulated non-DOT specification cylinder described as Essex Industries, Inc.'s Backpack Medical Oxygen System (BMOS). The BMOS liquid oxygen transport system must conform with the drawing for model number 50C-0089-3 dated on September 26, 2007 on file with the Office of Hazardous Materials Safety Approvals and Permits Division (OHMSAPD) and DOT 4L Specification (§§ 178.35 and 178.57) except as follows:

§ 178.35(f) *Markings.*

(1) Each cylinder must be marked with the following information:

(i) DOT-SP 14591 in lieu DOT Specification 4L, followed immediately by the service pressure in psig.

§ 178.57(a) *Type, size service pressure and design service.* The cylinder must be fusion welded, double walled, and vacuum insulated. The cylinder's water capacity must not exceed 2.0 liters and have a service pressure of 50 psig.

(1) * * *

(2) *Design service temperature.* The service temperature must be -320°F or colder.

§ 178.57(d) *Manufacture.*

(1) * * *

February 24, 2017

(2) The inner vessel bottom head is convex to internal pressure. * * *

(3) * * * Applies except the construction must be such that the total heat transfer, from the atmosphere at ambient temperature to the contents of the cylinder must not exceed 0.0046 Btu per hour, per Fahrenheit degree differential in temperature, per pound of water capacity of the cylinder.

* * *

b. TESTING - Periodic retesting is not required.

8. SPECIAL PROVISIONS:

a. In accordance with the provisions of Paragraph (b) of § 173.22a, persons may use the packaging authorized by this special permit for the transportation of the hazardous materials specified in paragraph 6, only in conformance with the terms of this special permit.

b. A person who is not a holder of this special permit, but receives a packaging covered by this special permit, may reoffer it for transportation provided no modification or change is made to the packaging and it is offered for transportation in conformance with this special permit and the HMR.

c. A current copy of this special permit must be maintained at each facility where the package is offered or reoffered for transportation.

d. Each packaging manufactured under the authority of this special permit must be either (1) marked with the name of the manufacturer and location (city and state) of the facility at which it is manufactured or (2) marked with a registration symbol designated by the Office of Hazardous Materials Safety Approvals and Permits Division (OHMSAPD) for a specific manufacturing facility.

e. A current copy of this special permit must be maintained at each facility where the package is manufactured under this special permit. It must be made available to a DOT representative upon request.

February 24, 2017

- f. Drivers and air crews must have been instructed as to necessary safeguards and proper procedures in the event of unusual delay, fire or accident.
- g. The transportation of oxygen by aircraft is only authorized when in accordance with § 175.501.
9. MODES OF TRANSPORTATION AUTHORIZED: Motor vehicle, rail freight, cargo vessel, and military cargo aircraft use only.
10. MODAL REQUIREMENTS: A current copy of this special permit must be carried aboard each cargo vessel, aircraft or motor vehicle used to transport packages covered by this special permit. The shipper must furnish a copy of this special permit to the carrier before or at the time the shipment is tendered.
11. COMPLIANCE: Failure by a person to comply with any of the following may result in suspension or revocation of this special permit and penalties prescribed by the Federal hazardous materials transportation law, 49 U.S.C. 5101 et seq:
- o All terms and conditions prescribed in this special permit and the Hazardous Materials Regulations, 49 CFR Parts 171-180.
 - o Persons operating under the terms of this special permit must comply with the security plan requirement in Subpart I of Part 172 of the HMR, when applicable.
 - o Registration required by § 107.601 et seq., when applicable.

Each "Hazmat employee", as defined in § 171.8, who performs a function subject to this special permit must receive training on the requirements and conditions of this special permit in addition to the training required by §§ 172.700 through 172.704.

No person may use or apply this special permit, including display of its number, when this special permit has expired or is otherwise no longer in effect.

February 24, 2017

Under Title VII of the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU)—"The Hazardous Materials Safety and Security Reauthorization Act of 2005" (Pub. L. 109-59), 119 Stat. 1144 (August 10, 2005), amended the Federal hazardous materials transportation law by changing the term "exemption" to "special permit" and authorizes a special permit to be granted up to two years for new special permits and up to four years for renewals.

12. REPORTING REQUIREMENTS: Shipments or operations conducted under this special permit are subject to the Hazardous Materials Incident Reporting requirements specified in 49 CFR '§' 171.15 B Immediate notices of certain hazardous materials incidents, and 171.16 B Detailed hazardous materials incident reports. In addition, the grantee(s) of this special permit must notify the Associate Administrator for Hazardous Materials Safety, in writing, of any incident involving a package, shipment or operation conducted under terms of this special permit.

Issued in Washington, D.C.:



for William Schoonover

Associate Administrator for Hazardous Materials Safety

Address all inquiries to: Associate Administrator for Hazardous Materials Safety, Pipeline and Hazardous Material Safety Administration, U.S. Department of Transportation, East Building PHH-30, 1200 New Jersey Avenue, Southeast, Washington, D.C. 20590.

Copies of this special permit may be obtained by accessing the Hazardous Materials Safety Homepage at http://hazmat.dot.gov/sp_app/special_permits/spec_perm_index.htm Photo reproductions and legible reductions of this special permit are permitted. Any alteration of this special permit is prohibited.

PO: Majors/TD